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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,231	02/19/2004	Vitaliy Fadeyev	IB-1855	7807

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LAWRENCE BERKELEY NATIONAL LABORATORY
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EXAMINER

GIESY, ADAM

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/783,231

Applicant(s)

FADEYEV ET AL.

Examiner

Adam R. Giesy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-31 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 7-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Singer (US Pat. No. 6,829,207 B1).

Regarding claim 1, Singer discloses a method of extracting an audio signal from a mechanical recording having a modulated groove on a surface, wherein said groove is formed by a modulated curvilinear longitudinal profile substantially orthogonal to a plurality of sequential transverse profiles from beginning to end of the groove, said longitudinal profile at each point in the transverse profile substantially tangent to said surface, each transverse section comprising two side surfaces and a bottom surface distanced from said surface (see Figures 2 and 3 – these figures depict the transverse profile [Fig. 2] and the longitudinal profile [Fig. 3]), comprising: i) profiling said mechanical recording to form a metrological data set comprising metrological data (see column 2, lines 12-22); and ii) processing said metrological data set by obtaining transverse profiles of said longitudinal profile representative of the modulated groove in three dimensions (see column 2, lines 12-22); and iii) further processing said metrological data set to reconstitute said audio signal defined by variations in the modulation of said modulated groove (see column 2, lines 41-43).

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Regarding claim 2, Singer discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the mechanical recording step further comprises: a) said modulated groove projecting above the surface of a negative medium (see column 5, lines 65-67).

Regarding claim 3, Singer discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the mechanical recording step further comprises: a) said modulated groove indenting below the surface of a positive medium (see column 5, line 65 thru column 6, line 2).

Regarding claim 7, Singer discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the profiling step further comprises: a) imaging said modulated groove with digital sectioning (see column 4, lines 23-30).

Regarding claim 8, Singer discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the profiling step further comprises: a) imaging said modulated groove with white light interferometry (see column 4, lines 54-55).

Regarding claim 9, Singer discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the profiling step further comprises: a) imaging said modulated groove with stylus profilometry (see column 6, lines 24-30).

Regarding claim 10, Singer discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the surface is selected from the group consisting of acetates, glass, wax, paraffin, lacquer, shellac, varnish, vinyl, celluloids,

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metallic soaps, aluminum, copper, zinc, a metal, a metal alloy, and a thermoplastic (see column 1, lines 34-44 – note that the plastic surface is disclosed).

Regarding claim 11, Singer discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the modulated groove comprises: a) a short transverse profile (see Figure 2); and b) a long longitudinal profile substantially orthogonal to said short transverse profile (see Figure 3).

Regarding claim 12, Singer discloses all of the limitations of claim 11 as discussed in the claim 11 rejection above and further that the profiling step, wherein said profiling step short transverse profile further comprises: a) a path modulation of said short transverse profile orthogonal to said long longitudinal profile (column 1, lines 34-44; see also Figures 2 and 3).

Regarding claim 13, Singer discloses all of the limitations of claim 12 as discussed in the claim 12 rejection above and further that the path modulation is in said tangent plane of said surface (see Figure 2, element 8 – Examiner interprets this as modulation or change in a direction that is tangent to the surface of the record).

Regarding claim 14, Singer discloses all of the limitations of claim 12 as discussed in the claim 12 rejection above and further that the path modulation is out of said tangent plane of said surface (see Figure 3).

Regarding claim 15, Singer discloses all of the limitations of claim 12 as discussed in the claim 12 rejection above and further that the profiling step further comprises: a) joining a plurality of short transverse profiles to form said metrological data set (see column 4, lines 23-42).

Regarding claim 16, Singer discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the processing step further comprises: a) piecewise approximating said metrological data set to model said modulated groove (see column 4, lines 23-42).

Regarding claim 17, Singer discloses all of the limitations of claim 16 as discussed in the claim 16 rejection above and further that the piecewise approximating step further comprises: a) tracking a spatial location of said substantially constant profile portion in said groove to provide a tracked spatial location (see column 4, lines 23-42 – note that the data points – Figure 2, elements 34 – are tracked at different special locations on every cross-section that is measured).

Regarding claim 18, Singer discloses all of the limitations of claim 17 as discussed in the claim 17 rejection above and further that the tracking step spatial location is determined by the metrological data representing one side of said groove (see column 5, lines 15-17).

Regarding claim 19, Singer discloses all of the limitations of claim 17 as discussed in the claim 17 rejection above and further that the tracking step spatial location is determined by the metrological data representing both sides of said groove (see Figure 2, elements 34 – note that the data points can be found on either side of the groove).

Regarding claim 20, Singer discloses all of the limitations of claim 17 as discussed in the claim 17 rejection above and further that the tracking step spatial location is determined by the metrological data representing said bottom surface of said

groove (see Figure 2, elements 34 – note that since the groove is a “V” shaped groove, the Examiner will consider “the bottom” to be the lower portion of the sides of the “V”).

Regarding claim 21, Singer discloses all of the limitations of claim 17 as discussed in the claim 17 rejection above and further that the tracking step spatial location is determined by the metrological data representing the substantially constant profile portion of said groove (see column 6, lines 11-15).

Regarding claim 22, Singer discloses all of the limitations of claim 17 as discussed in the claim 17 rejection above and further that the processing step further comprises: transforming said tracked spatial location into said audio extraction (see column 2, lines 62-64).

Claim 23 is drawn to the apparatus corresponding to the method of extracting audio as claimed in claim 1. Therefore claim 23 correspond to method claim 1, and is rejected for the same reasons of anticipation (obviousness) as used above.

Regarding claim 24, Singer discloses all of the limitations of claim 17 as discussed in the claim 17 rejection above and further that the tracking step further comprises: a) interpolating said spatial location in said transverse profile portion to provide said tracked spatial location (see column 6, lines 11-23).

Regarding claim 25, Singer discloses all of the limitations of claim 24 as discussed in the claim 24 rejection above and further comprising: a) curve fitting said tracked spatial location for minimized error from said short transverse profile portion (see column 6, lines 11-23); and b) transforming said tracked spatial location into said audio extraction (see column 2, lines 62-64).

Claim 26 is drawn to the apparatus corresponding to the method of extracting audio as claimed in claim 25. Therefore claim 26 correspond to method claim 25, and is rejected for the same reasons of anticipation (obviousness) as used above.

Regarding claim 27, Singer discloses all of the limitations of claim 17 as discussed in the claim 17 rejection above and further that the tracking step further comprises: a) interpolating said spatial location in said longitudinal profile portion to provide said tracked spatial location (see column 6, lines 11-23).

Regarding claim 28, Singer discloses all of the limitations of claim 27 as discussed in the claim 27 rejection above and further comprising: a) curve fitting said tracked spatial location for minimized error from said short transverse profile portion (see column 6, lines 11-23); and b) transforming said tracked spatial location into said audio extraction (see column 2, lines 62-64).

Claim 29 is drawn to the apparatus corresponding to the method of extracting audio as claimed in claim 28. Therefore claim 29 correspond to method claim 28, and is rejected for the same reasons of anticipation (obviousness) as used above.

Regarding claim 30, Singer discloses a method for reconstructing a mechanical recording, comprising: a) providing a mechanical recording comprising analog audio data (see column 1, lines 10-18); b) a means for extracting metrological data from said analog audio data (see Figure 2, element 4); and c) a means for transforming said metrological data into an audio extraction of said mechanical recording (see column 2, lines 62-64).

Regarding claim 31, Singer discloses a method of extracting an audio signal from a mechanical recording having a modulated groove on a surface, wherein said groove is formed by a modulated curvilinear longitudinal profile substantially orthogonal to a plurality of sequential transverse profiles from beginning to end of the groove, said longitudinal profile at each point in the transverse profile substantially tangent to said surface, each transverse section comprising two side surfaces and a bottom surface distanced from said surface (see Figures 2 and 3 – these figures depict the transverse profile [Fig. 2] and the longitudinal profile [Fig. 3]), comprising: i) a means for profiling said mechanical recording to form a metrological data set comprising metrological data (see column 2, lines 12-22); and ii) a means for processing said metrological data set by obtaining transverse profiles of said longitudinal profile representative of the modulated groove in three dimensions (see column 2, lines 12-22); and iii) a means for further processing said metrological data set to reconstitute said audio signal defined by variations in the modulation of said modulated groove (see column 2, lines 41-43).

Allowable Subject Matter

3. Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 4 is allowable since none of the prior art of record, alone or in combination, discloses or suggests all of the limitations of claim 1 as well as the further limitation that the profiling step further comprises: a) confocally imaging said modulated groove.

Claims 5 and 6 are objected to as they are dependent upon the aforementioned claim 4.

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Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Cavaglieri, Stefano S. et al. (Optical Retrieval and Storage of Analog Sound Recordings) discloses a method an apparatus for optically scanning phonographic records in order to reconstruct the audio information.

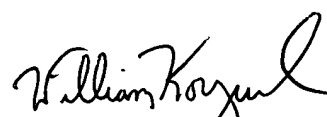
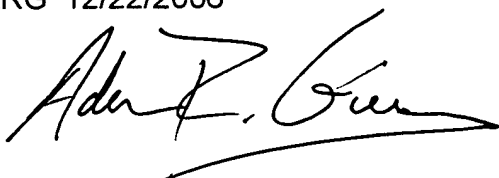
b. Poliak, Juraj, (The Optical Turntable) discloses a method an apparatus for optically scanning phonographic records in order to reconstruct the audio information.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam R. Giesy whose telephone number is (571) 272-7555. The examiner can normally be reached on 8:00am- 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARG 12/22/2006



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